Section 112, Second Paragraph Rejection

Claims 6 and 16 were rejected under 35 U.S.C. §112, second paragraph. The Examiner stated that the requirement that the graphite flake to be sized no more than about 30% by weight +80 mesh is not clear and proceeded to interpret the phrase to mean that the 30% by weight of the graphite flake does not pass through an 80 mesh screen.

A purpose of 35 U.S.C. §112, second paragraph is to determine the boundaries of what constitutes infringement of the patent. MPEP § 2173. All that is required is that the claim language set out the particular subject matter with a reasonable degree of clarity and particularity. MPEP § 2173.02. The Examiner may suggest claim language but should not reject claims or insist on his own preferences. MPEP § 2173.02.

As for the disputed claim language, the Examiner interpreted the claim language very closely to what is stated on page 6, lines 13-15 of the specification, "The graphite flake used in the present invention is sized such that no more than about 30% by weight of the flake is +80 mesh (U.S. standard screen). That is, no more than about 30% of the flake does not pass through an 80 mesh screen ...."

In light of the facts that the standard is if the public can determine what are the boundaries of what constitutes infringement of the claim, that the Examiner was able to interpret the claim terminology, and that the Examiner's interpretation was in accordance with the specification,(except that the Examiner did not include the language "no more than about"), Applicant respectfully disagrees that the cited claim language is not clear and the rejection is improper. From the Examiner's comments and the specification, the scope of the claim would be clear to a person of ordinary skill in the art. For the above reasons this rejection should be withdrawn.

Prior Art Rejections

The Examiner rejected claims 6-10 and 16-20 under 35 U.S.C. § 103(a) as being unpatentable over Mercuri (U.S. patent 6,017,663) in view of Mercuri (U.S. patent 6,087,034). In citing the '663 Mercuri reference, the Examiner cites to various passages of the reference. Applicant believes that the Examiner concludes the rejection to claims 6 and 16 by stating the following:

> "Mercuri '663 does not require flake sized no more than about 30% b weight +80 mesh, however, the reference at col. 3, lines 40-49 suggests the use of finer flake than 80 mesh sized unexfoliated intercalated natural graphite flakes. Although this results in a concentration of such particles near the surface of the bed of large exfoliated graphite particles and also results in a flake with excess retained water content which results in a sheet which loses expansion capability, the fact remains the use of the claimed size of flake is known, …."

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143 - § 2143.03 for decisions pertinent to each of these criteria.

Before discussing the rejection at issue, Applicant will discuss what is meant by the graphite flake sizes indicated in the '663 patent. In the reference, the first batch of flake is described as at least 80% 20 x 50 mesh (through 20 mesh on 50 mesh). Col 3, lines 4-5. The second batch is described as at least 80% 50 x 80 mesh and this batch is disclosed to be 5 to 25% by weight of the mixture. Col 3, lines 16-24, Col. 4, 55-56, and claim 1. It is Applicant's understanding that a predetermined percentage of flake through one mesh size and on a second mesh size (A x B), means that the predetermined percentage of flake will pass through the first mesh size but not through the second mesh size. As for the second batch 80% of the flake will pass through the 50 mesh but not through the 80 mesh. Therefore, it is Applicant's position that a batch of at least 80% 50 x 80 mesh sized flake is not the same as a batch of flake which 70% of the batch passes through an 80 mesh.

As for the claimed invention, the reference does not teach, suggest, or disclose each and every element of the claimed invention. One such element is that no more than 30% of the graphite flake will not pass through an 80 mesh screen. In other words at least 70% of the graphite flake will pass through the 80 mesh screen. The reference plainly teaches that at most

only 25% of the flake used to form the sheet should be on an 80 mesh screen. Applicant recognizes the Examiner's argument that the reference suggests that finer flake than 80 mesh may be used, however, nothing in the reference suggests that the percentage of such finer flake should be over the disclosed 25%. Therefore, the element of the concentration of the claimed flake is not suggested or taught by the reference and the rejection is improper.

Alternatively, Applicant states that the reference lacks the necessary motivation to modify the teachings of the reference to derive the article of either one of claims 6 and 16. One reason for this is that the nature of the problems addressed by the claimed invention and the reference are not similar. The invention of claims 6 and 16 is directed making a graphite article more conductive in the thickness direction by unaligning the particles which make-up the graphite articles. In contrast, the reference is directed to improving the ability of the graphite article to act as an insulator to the flow of a fluid or heat (fire) by reducing the void space in the article upon the application of heat to the article.

With respect to claims 6 and 16, the claimed invention results in a flexible graphite article that with enhanced isotropy, such that the electrical conductivity in the thickness of the claimed article is increased. Through the present application, Applicants learned that one way to make a graphite article more isotropic was to make the article from finer sized graphite flake. Applicant learned that the use of finer sized graphite flake resulted in the individual particles not aligning up as well in the final product as a final product derived from larger sized flake. This enhancement in isotropy is evidenced by the increased electrical conductivity of the graphite article in the thickness direction.

With respect to the reference, the reference patent is directed to a different issue. The reference patent is directed to a graphite article, which the void space of the graphite article may be reduced during use of the article. In the case of the article of the reference patent being used for a sealing application, the non-expanded graphite particles in the article will expand upon the particles being heated from the use of the graphite article. As the graphite particles expand, the particles will fill the internal voids in the graphite article or the voids between the graphite article and the face of an adjacent flange. By reducing the void space in the graphite article or between the graphite article and the flange, the sealability properties of the graphite article is improved. However, the expansion of the non-expanded graphite particles does not address the issue of the alignment of the graphite particles which make-up the graphite article.

As for the use of the reference article as a fire retardant material, the problem to be solved is the same as in the sealing application of the reference. In the case of the reference article being used as a fire retardant, the non-expanded graphite particles will expanded and displace air in the reference graphite article. The displacing of the air in the graphite article will remove oxygen-containing passages in the graphite article that would allow the fire to spread. Therefore, once again by reducing the void space of the graphite article, the article acts as an insulator or barrier to prohibit the spread of the fire as well as any heat from the fire.

Therefore, for the above reasons a person of ordinary in the art would not modify the teachings of the reference to come up with the article of either one of claims 6 or 16 because the nature of the problem addressed in the reference is not the same as the problem addressed in the application under consideration. In light of the above remarks, the Examiner is requested to withdraw the prior based rejection to claims 6 and 16.

For the reasons set forth above, Applicants believe that the claims are patentable over the references cited and applied by the Examiner and a prompt and favorable action is solicited. The applicants believe that these claims are in condition for allowance, however, if the Examiner disagrees, the applicants respectfully request that the Examiner telephone the undersigned.

No additional fee is due. If there are any additional fees due in connection with the filing of this Amendment, including any fees required for an additional extension of time under 37 CFR 1.136, such an extension is requested and the Commissioner is authorized to charge any debit or credit any overpayment to Deposit Account No. 50-1202.

Respectfully submitted,
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TRK/cam
Enclosure: Figure 1

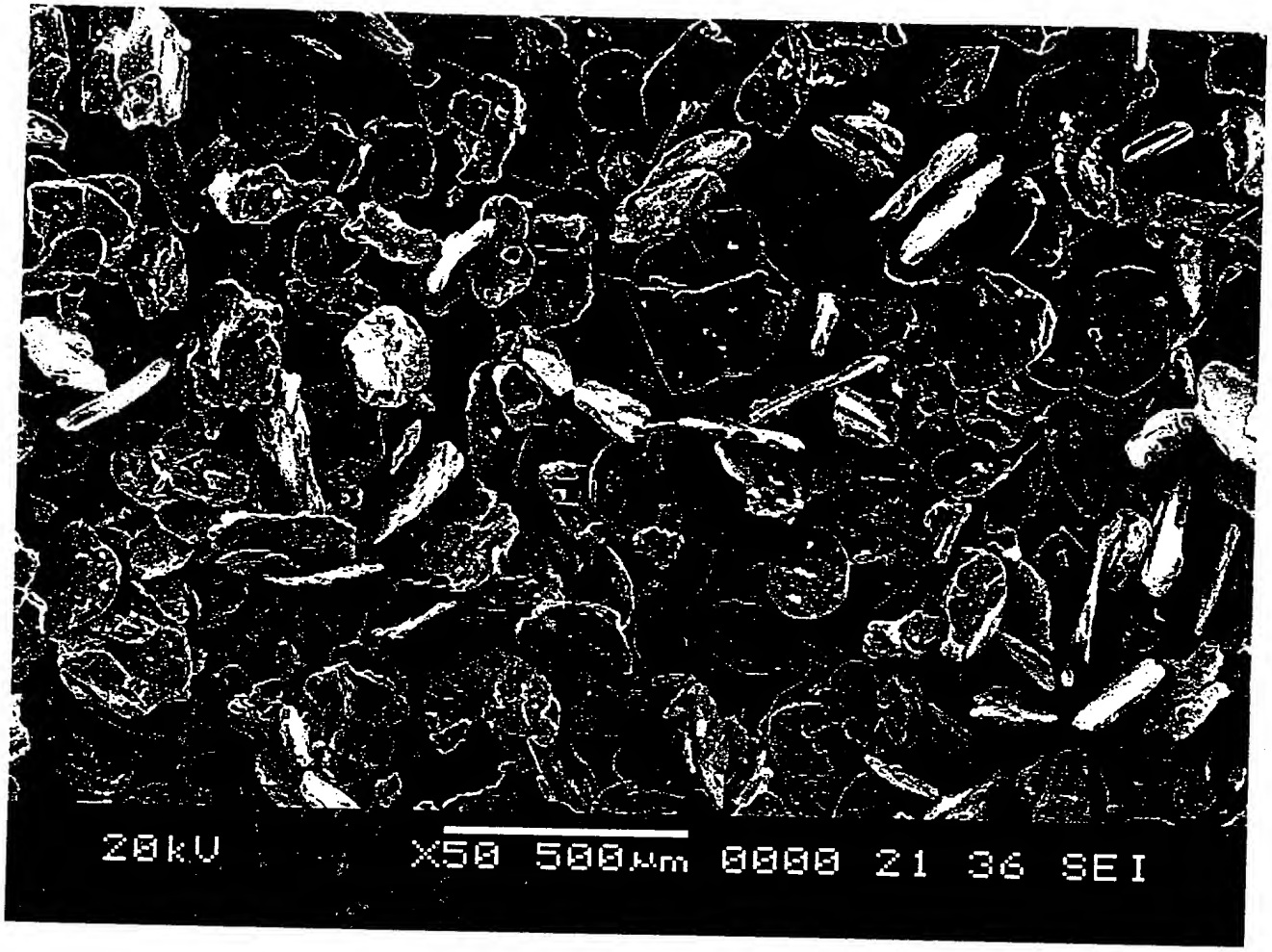

Fig. 1